

SBE SEA-BIRD ELECTRONICS, INC.

1808 - 136th Place Northeast, Bellevue, Washington 98005 USA
Phone: (425) 643-9866 Fax: (425) 643-9954 www.seabird.com

Service

Report

RMA Number

48539

Customer Information:

Company Pacific Marine Center / NOAA

Date 12/19/2007

Contact Kaye Kinoshita

PO Number EM-2034

Serial Number 043127

Model Number SBE 04C

Services Requested:

1. Perform Routine Calibration Service.

Problems Found:

Services Performed:

1. Performed initial diagnostic evaluation.
2. Performed "Post Cruise" calibration of the conductivity sensor.

Special Notes:

SEA-BIRD ELECTRONICS, INC.

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SENSOR SERIAL NUMBER: 3127
CALIBRATION DATE: 30-Oct-07

SBE4 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

GHIJ COEFFICIENTS

g = -1.04631387e+001
h = 1.29326976e+000
i = 3.81768164e-004
j = 3.74927406e-005
CPcor = -9.5700e-008 (nominal)
CTcor = 3.2500e-006 (nominal)

ABCDM COEFFICIENTS

a = 2.16050999e-004
b = 1.29375764e+000
c = -1.04643164e+001
d = -8.77945496e-005
m = 3.5
CPcor = -9.5700e-008 (nominal)

BATH TEMP (ITS-90)	BATH SAL (PSU)	BATH COND (Siemens/m)	INST FREQ (kHz)	INST COND (Siemens/m)	RESIDUAL (Siemens/m)
0.0000	0.0000	0.00000	2.84285	0.00000	0.00000
-0.9930	34.9386	2.81410	5.45674	2.81407	-0.00003
1.0451	34.9382	2.98931	5.57904	2.98933	0.00003
15.0000	34.9388	4.28505	6.41084	4.28506	0.00002
18.5000	34.9384	4.63281	6.61620	4.63283	0.00001
29.0000	34.9341	5.71943	7.22003	5.71937	-0.00007
32.5000	34.9225	6.09241	7.41595	6.09245	0.00005

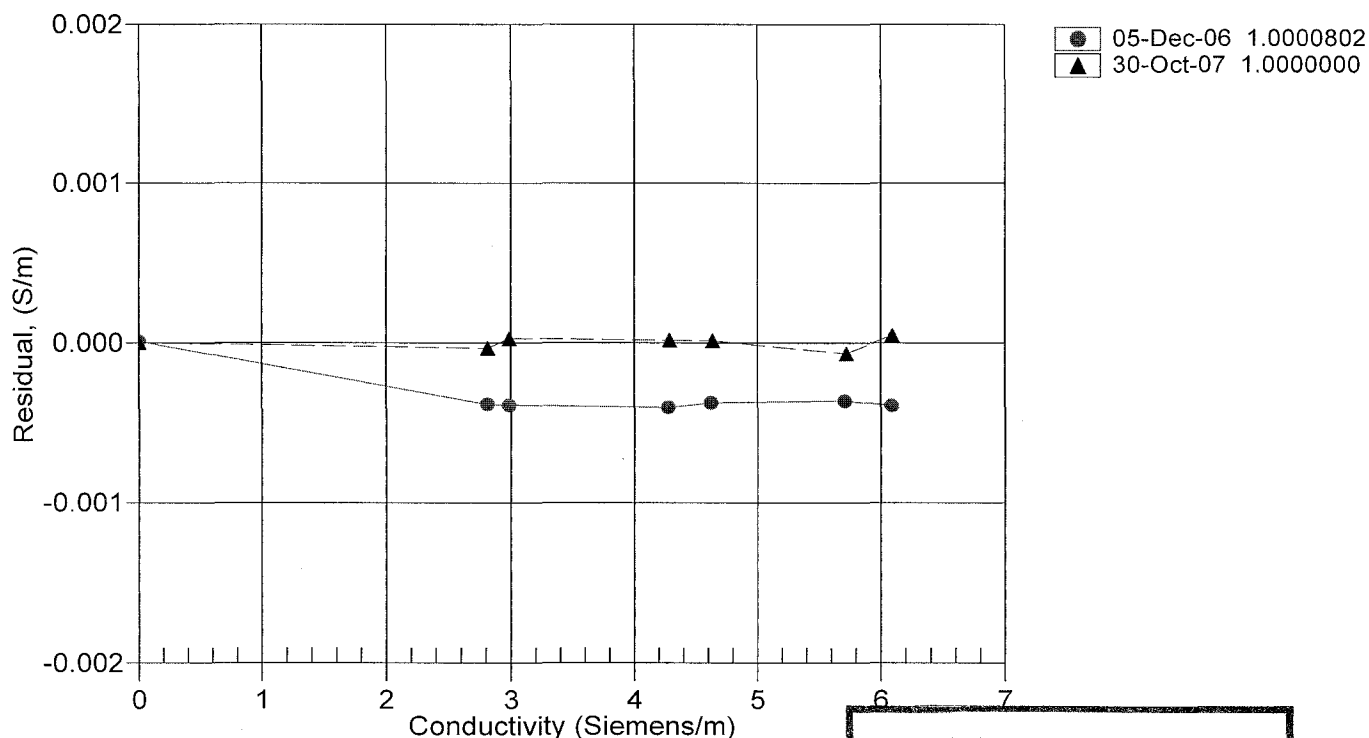
Conductivity = $(g + hf^2 + if^3 + jf^4) / 10(1 + \delta t + \epsilon p)$ Siemens/meter

Conductivity = $(af^m + bf^2 + c + dt) / [10(1 + \epsilon p)]$ Siemens/meter

t = temperature[°C]; p = pressure[decibars]; δ = CTcor; ϵ = CPcor;

Residual = (instrument conductivity - bath conductivity) using g, h, i, j coefficients

Date, Slope Correction



**POST CRUISE
CALIBRATION**



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Conductivity Calibration Report

Customer:	Pacific Marine Center / NOAA		
Job Number:	48539	Date of Report:	10/30/2007
Model Number	SBE 04C	Serial Number:	043127

Conductivity sensors are normally calibrated 'as received', without cleaning or adjustments, allowing a determination of sensor drift. If the calibration identifies a problem or indicates cell cleaning is necessary, then a second calibration is performed after work is completed. The 'as received' calibration is not performed if the sensor is damaged or non-functional, or by customer request.

An 'as received' calibration certificate is provided, listing the coefficients used to convert sensor frequency to conductivity. Users must choose whether the 'as received' calibration or the previous calibration better represents the sensor condition during deployment. In SEASOFT enter the chosen coefficients using the program SEACON. The coefficient 'slope' allows small corrections for drift between calibrations (consult the SEASOFT manual). Calibration coefficients obtained after a repair or cleaning apply only to subsequent data.

'AS RECEIVED CALIBRATION'

☒ Performed ☐ Not Performed

Date: 10/30/2007

Drift since last cal: +0.00020 PSU/month*

Comments:

'CALIBRATION AFTER CLEANING & REPLATINIZING'

☐ Performed ☒ Not Performed

Date:

Drift since Last cal: PSU/month*

Comments:

**Measured at 3.0 S/m*

Cell cleaning and electrode replatinizing tend to 'reset' the conductivity sensor to its original condition. Lack of drift in post-cleaning-calibration indicates geometric stability of the cell and electrical stability of the sensor circuit.